

PART Y-8 CONFINED SPACES

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WAC 296-307-642 Scope. This part applies to all confined spaces and provides requirements to protect employees from the hazards of entering and working in confined spaces. This part applies in any of the following circumstances:

- You have confined spaces in your workplace.
- Your employees will enter another employer's confined spaces.
- A contractor will enter your confined spaces.
- You provide confined space rescue services.

WAC 296-307-642 (Cont.)

You can use Table 1 to help you decide which requirements to follow for confined spaces.

Table 1
Requirements for Confined Spaces

| For confined spaces that are | The requirements in the following sections apply | | | | | |
|------------------------------------|--|-----|-----|-----|-----|-----|
| | 644 | 646 | 648 | 650 | 652 | 654 |
| Permit-required confined spaces | X | X | X | X | X | X |
| Entered by a contractor | X | X | X | X | X | X |
| Nonpermit confined spaces | X | | | | | X |
| Never entered | X | | | | | |
| If you only: | | | | | | |
| | | | | | | |
| Use alternate entry procedures | X | X | X | | X | |
| Have a contractor enter your space | X | | | | | |
| Are a rescue service provider | | X | X | X | | |

Definition:

A **confined space** is a space that is ALL of the following:

- Large enough and arranged so an employee could fully enter the space and work.
- Has limited or restricted entry or exit. Examples of spaces with limited or restricted entry are tanks, vessels, silos, storage bins, hoppers, vaults, excavations, and pits.
- Not primarily designed for human occupancy.

Note:

- Requirements in other chapters may apply to your work. You will find some safety and health requirements are addressed on a broad level in this part, while being addressed for a specific application in another rule. When this happens, both requirements apply and should not conflict. When a conflict does occur, you need to follow the more specific requirement.
- If you are uncertain which requirements to follow, contact your local labor and industries (L&I) office.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-662, filed 12/21/04, effective 04/02/05.]

WAC 296-307-644 Summary. Identifying and controlling permit-required confined spaces.

Your responsibility:

To identify your permit-required confined spaces and control employee entry.

You must:

Identify permit-required confined spaces.

WAC 296-307-64402

WAC 296-307-644 (Cont.)

Inform employees and control entry to permit-required confined spaces.

WAC 296-307-64404

Follow these requirements when you contract with another employer to enter your confined space.

WAC 296-307-64406

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-644, filed 12/21/04, effective 04/02/05.]

WAC 296-307-64402 Identify permit-required confined spaces.

Important:

- If your workplace contains only nonpermit confined spaces and your employees do not enter another employer's confined space, you may follow only the requirements in:
 - WAC 296-307-644, Identifying and controlling permit-required confined spaces; and
 - WAC 296-307-654, Nonpermit confined space requirements.

You must:

- Identify all permit-required confined spaces in your workplace.
- Assume any confined space is a permit-required confined space, unless you determine the space to be a nonpermit confined space.
 - If you enter the space to determine the hazards, follow the requirements in WAC 296-307-650, Permit entry procedures.
 - If you evaluate the confined space and there are no potential or actual hazards, you can consider it to be a nonpermit confined space.
- Document your determination that the space is nonpermit, as required by WAC 296-307-654.

Definitions:

- A **permit-required confined space or permit space** is a confined space that has one or more of the following characteristics capable of causing death or serious physical harm:
 - Contains or has a potential to contain a hazardous atmosphere.
 - Contains a material with the potential for engulfing someone who enters the space.
 - Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross-section.
 - Contains any physical hazard. This includes any recognized health or safety hazards - including engulfment in solid or liquid material, electrical shock, or moving parts.
 - Contains any other recognized safety or health hazard that could either:
 - ♦ Impair the ability to self rescue;
 - OR**
 - ♦ Result in a situation that presents an immediate danger to life or health.
- A **nonpermit confined space** is a confined space that does **NOT** contain actual hazards or potential hazards capable of causing death or serious physical harm.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-64402, filed 12/21/04, effective 04/02/05.]

WAC 296-307-64404 Inform employees and control entry to permit-required confined spaces.

You must:

- (1) Provide information about confined spaces as follows:
 - Make available to affected employees and their authorized representatives all information and documents required by this part.
 - Inform affected employees about the existence, location, and danger of any permit-required confined spaces in your workplace by:
 - Posting danger signs; or
 - Using any other equally effective means to inform employees.

Note: A sign reading “Danger-Permit Required Confined Space, DO NOT ENTER” or using pictures or other similar wording employees can understand would satisfy the requirement for a sign.

You must:

- (2) Take effective measures to prevent unauthorized employees from entering permit-required confined spaces.

Note: Examples of measures to prevent employee entry include padlocks, bolted covers, special tools to remove covers, and providing employee training.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-64404, filed 12/21/04, effective 04/02/05.]

WAC 296-307-64406 Follow these requirements when you contract with another employer to enter your confined space.

Important:

The contractor is responsible for following all confined space requirements in this part and in other rules that apply.

You must:

- Do **all** of the following if you arrange to have another employer (contractor) perform work that involves entry into your permit-required confined space:
 - Inform the contractor:
 - ♦ That the workplace contains permit-required confined spaces and entry is allowed only if the applicable requirements of this part are met.
 - ♦ Of the identified hazards and your experience with each permit-required confined space.
 - ♦ Of any precautions or procedures you require for the protection of employees in or near spaces where the contractor will be working.
 - Coordinate entry operations with the contractor, when either employees or employers from the different companies will be working in or near permit-required confined spaces.
 - Discuss entry operations with the contractor when they are complete. Include the following in your discussion:
 - ♦ The program followed during confined space entry; and
 - ♦ Any hazards confronted or created.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-64406, filed 12/21/04, effective 04/02/05.]

PERMIT-REQUIRED CONFINED SPACE PROGRAM

WAC 296-307-646 Summary.

Your responsibility:

To develop your permit-required confined space program and practices.

Important:

This section applies if employees will enter a permit-required confined space.

You must:

Develop a written permit-required confined space program.

WAC 296-307-64602

Meet these additional requirements if your employees enter another employer's confined space.

WAC 296-307-64604

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-646, filed 12/21/04, effective 04/02/05.]

WAC 296-307-64602 Develop a written permit-required confined space program.

Important:

- Identify and evaluate the hazards of permit-required confined spaces and the work performed, to assist you in developing your entry program.

You must:

- Develop a written program, before employees enter, that describes the means, procedures, and practices you use for the safe entry of permit-required confined spaces as required by this part. Include the following when applicable to your confined space entry program:
 - Documentation of permit entry procedures.
 - Documentation used for alternate entry procedures.
 - How to reclassify permit-required confined spaces to nonpermit spaces.
 - Designation of employee roles, such as entrants, attendants, entry supervisors, rescuers, or those who test or monitor the atmosphere in a permit-required space.
 - Identification of designated employee duties.
 - Training employees on their designated roles.
 - How to identify and evaluate hazards.
 - Use and maintenance of equipment.
 - How to prevent unauthorized entry.
 - How to coordinate entry with another employer.
 - How to rescue entrants.

Note: For alternate entry, your written program only needs to meet the requirements of WAC 296-307-648, Employee training, and WAC 296-307-652, Alternate entry procedures, of this part.

You must:

- Consult with affected employees and their authorized representatives when developing and implementing all aspects of your permit-required confined space program.
- Make the written program available to employees and their authorized representatives.
- Update your written program as necessary.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-64602, filed 12/21/04, effective 04/02/05.]

WAC 296-307-64604 Meet these additional requirements if your employees enter another employer's confined space.

You must:

- Obtain any available information about permit-required confined space hazards and entry operations from the host employer.
- Coordinate entry operations with any other employers whose employees will be working in or near the permit-required confined space.
- Inform the host employer, either through a debriefing or during entry operations, about:
 - The entry program you will follow; and
 - Any hazards you confronted or created in the space during entry operations.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-64604, filed 12/21/04, effective 04/02/05.]

EMPLOYEE TRAINING

WAC 296-307-648 Summary.

Your responsibility:

To make sure employees are trained to perform their designated roles safely.

You must:

Provide employee training.

WAC 296-307-64802

Certify employee proficiency.

WAC 296-307-64804

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-648, filed 12/21/04, effective 04/02/05.]

WAC 296-307-64802 Provide employee training.

You must:

- Provide training to each employee involved in permit-required confined space activities, so they acquire the understanding, knowledge and skills necessary to safely perform assigned duties.
 - Establish employee proficiency in their confined space duties.
 - Introduce new or revised procedures as necessary.

Note:

- Employers can determine employee proficiency by:
 - Observing employee performance during training exercises that simulate actual confined space conditions.
 - A comprehensive written examination; or
 - Any other method that is effective for the employer.

WAC 296-307-64802 (Cont.)

You must:

- Provide training at the following times:
 - Before an employee is first assigned to duties covered by this part.
 - Before there is a change in an employee's assigned duties.
 - When there is a permit-required confined space hazard for which the employee has not already been trained.
 - If you have reason to believe that there are either:
 - ♦ Deviations from your procedures for permit-required confined space entry; or
 - ♦ Employee knowledge or use of your procedures is inadequate.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-64802, filed 12/21/04, effective 04/02/05.]

WAC 296-307-64804 Certify employee proficiency.

You must:

- Certify employee proficiency in their assigned duties.
- Make sure the certification:
 - Contains each employee's name, the trainer's written or electronic signature or initials, and the dates of training.
 - Is available for inspection by employees and their authorized representatives.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-64804, filed 12/21/04, effective 04/02/05.]

PERMIT ENTRY PROCEDURES

WAC 296-307-650 Summary.

Your responsibility:

To establish procedures for the safe permit-required entry of confined spaces.

Implement procedures for entry permits.

WAC 296-307-65002

Use an entry permit that contains all required information.

WAC 296-307-65004

Keep and review your entry permits.

WAC 296-307-65006

Prevent unauthorized entry.

WAC 296-307-65008

Provide, maintain, and use proper equipment.

WAC 296-307-65010

Evaluate and control hazards for safe entry.

WAC 296-307-65012

Make sure you have adequate rescue and emergency services available.

WAC 296-307-65014

Use nonentry rescue systems or methods whenever possible.

WAC 296-307-65016

Make sure entry supervisors perform their responsibilities and duties.

WAC 296-307-65018

Provide an attendant outside the permit-required confined space.

WAC 296-307-65020

WAC 296-307-650 (Cont.)

Make sure entrants know the hazardous conditions and their duties.

WAC 296-307-65022

Implement procedures for ending entry.

WAC 296-307-65024

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-650, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65002 Implement procedures for entry permits.

You must:

- Identify and evaluate, before employees enter, potential hazards from:
 - The permit-required confined space; and
 - The work to be performed.
- Complete an entry permit before entry is authorized, documenting that you have completed the means, procedures and practices necessary for safe entry and work.
- Make sure that entrants or their representatives have an opportunity to observe any monitoring or testing, or any actions to eliminate or control hazards, performed to complete the permit.
- Identify the entry supervisor.
 - Make sure the entry supervisor signs the entry permit, authorizing entry, before the space is entered.
- Make the completed permit available to entrants or their authorized representatives at the time of entry.
 - Do this by either posting the completed permit at the entry location, or by any other equally effective means.
- Make sure the duration of the permit does not exceed the time required to complete the assigned task or job identified on the permit.
- Note any problems encountered during an entry operation on the permit. Use the information to make appropriate revisions to your program, entry operations, means, systems, procedures and practices.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65002, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65004 Use an entry permit that contains all required information.

You must:

- Make sure your entry permit identifies **all** of the following that apply to your entry operation:
 - The space to be entered.
 - Purpose of the entry.
 - Date and the authorized duration of the entry permit.
 - Hazards of the space to be entered.
 - Acceptable entry conditions.
 - Results of initial and periodic tests performed to evaluate and identify the hazards and conditions of the space, accompanied by the names or initials of the testers and by an indication of when the tests were performed.
 - Appropriate measures used before entry to isolate the space, and eliminate or control hazards.

WAC 296-307-65004 (Cont.)

- ♦ Examples of appropriate measures include the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit-required confined spaces.
- Names of entrants and current attendants.
- Other means include the use of rosters or tracking systems as long as the attendant can determine quickly and accurately, for the duration of the permit, which entrants are inside the space.
 - The current entry supervisor.
 - A space for the signature or initials of the original supervisor authorizing entry.
 - Communication procedures for entrants and attendants to maintain contact during the entry.
 - Equipment provided for safe entry, such as:
 - ♦ Personal protective equipment (PPE).
 - ♦ Testing equipment.
 - ♦ Communications equipment.
 - ♦ Alarm systems.
 - ♦ Rescue equipment.
 - Rescue and emergency services available, and how to contact them. Include equipment to use, and names and contact information.
 - Other information needed for safety in the particular confined space.
 - Additional permits issued for work in the space, such as for hot work.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65004, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65006 Keep and review your entry permits.

You must:

- Keep entry permits for at least one year.
- Keep entry permits or other atmospheric monitoring records that show the actual atmosphere an employee entered or worked in, as employee exposure records.
- Review your permit-required confined space entry program as follows:
 - Conduct a review when you have any reason to believe your entry program may not protect employees, and revise your program before allowing subsequent entries.

Note: Examples of circumstances requiring the review of your program include the following:

- There is unauthorized entry of a permit space.
- A permit space hazard not covered by the permit is found.
- A condition prohibited by the permit occurs.
- An injury or near-miss occurs during entry.
- There is a change in the use or configuration of a permit space.
- An employee complains about the effectiveness of the program.

You must:

- Review canceled entry permits within one year following each entry to evaluate:
 - Your permit-required confined space program.
 - The protection provided to employees entering permit-required confined spaces.

WAC 296-307-65006 (Cont.)

- Update your written permit-required confined space entry program as necessary.

Note: Employers may perform a single annual review covering all entries performed during a twelve-month period. If no entry is performed during a twelve-month period, no review is necessary.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65006led 12/21/04, effective 04/02/05.]

WAC 296-307-65008 Prevent unauthorized entry.

You must:

- Implement measures necessary to prevent unauthorized entry into permit-required confined spaces, when conducting authorized entry.

Note:

- When removing entrance covers to open the confined space, protect entrants and those outside the confined space from hazards.
- Examples of measures to prevent unauthorized entry are signs, barricades, warning tape, and an attendant.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65008, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65010 Provide, maintain, and use proper equipment.

You must:

- Provide the equipment in Table 2, when needed and at no cost to employees.
- Make sure that employees use provided equipment properly.
- Maintain the provided equipment.

WAC 296-307-65010 (Cont.)

Table 2
Equipment Provided to Employees at No Cost

| Type of equipment | For |
|--|---|
| Testing and monitoring equipment | Evaluating permit-required confined space conditions |
| Ventilating equipment | Obtaining and maintaining acceptable entry conditions |
| Communication equipment | Effective communication between the attendant and the entrants and to initiate rescue when required |
| Personal protective equipment (PPE) | Protecting employees from hazards of the space or the work performed |
| Lighting equipment | Employees to see well enough to work safely and to exit the space quickly in an emergency |
| Barriers or shields, such as pedestrian, vehicle or other barriers | Protecting employees from hazards outside of the space |
| Ladders | Safe entry and exit by entrants |
| Rescue and emergency equipment, except for equipment provided by the rescue service provider | Safe and effective rescue |
| Any other equipment | Safe entry into and rescue from permit-required confined spaces |

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65010, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65012 Evaluate and control hazards for safe entry.

- Evaluate and control hazards for safe entry into permit-required confined spaces by doing all the following:
 - Test for atmospheric hazards, in this order:
 - ♦ Oxygen.
 - ♦ Combustible gases and vapors.
 - ♦ Toxic gases and vapors.
 - Provide each entrant or their authorized representative an opportunity to observe any of the following:
 - ♦ Preentry testing.
 - ♦ Subsequent testing.
 - ♦ Monitoring of permit-required spaces.
 - Reevaluate the permit-required space in the presence of any entrant, or their authorized representative, who requests this to be done because they have reason to believe that the evaluation of that space may not have been adequate.
 - Upon request, immediately provide each entrant or their authorized representative, with the results of any testing required by this rule.
 - Continuously monitor conditions in areas where entrants are working, when isolation of the space is not feasible.

WAC 296-307-65012 (Cont.)

- ♦ Examples would be a large space or space that is part of a continuous system, such as a sewer.
- ♦ Evaluate space conditions during entry as follows:

Table 3
Evaluating Space Conditions

| You must: | In order to |
|--|---|
| Test conditions before entry | Determine that acceptable entry conditions exist before entry is authorized by the entry supervisor |
| Test or evaluate space conditions during entry | Determine that acceptable entry conditions are being maintained during entry operations |
| Evaluate entry operations | Make sure entrants of more than one employer working at the same time in or around a permit-required confined space, do not endanger each other |

Important:

This section applies to both:

- Employers whose employees use permit entry procedures; and
- Employers who provide rescue services.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65012, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65014 Make sure you have adequate rescue and emergency services available.

You must:

- (1) Make sure you have adequate rescue and emergency services available during your permit-required confined space entry operations.
 - Evaluate and select rescue teams or services who can:
 - Respond to a rescue call in a timely manner. Timeliness is based on the identified hazards. Rescuers must have the capability to reach potential victims within an appropriate time frame based on the identified permit space hazards.
 - Proficiently rescue employees from a permit-required confined space in your workplace. Rescuers must have the appropriate equipment for the type of rescue.
 - Make sure that at least one member of the rescue team or service holds a current certification in first aid and cardiopulmonary resuscitation (CPR).
 - Inform each rescue team or service about the hazards they may confront when called to perform rescue.
 - Provide the rescue team or service with access to all permit spaces from which rescue may be necessary.
 - This will allow them to develop appropriate rescue plans and to practice rescue operations.

WAC 296-307-65014 (Cont.)

Note: What will be considered timely will vary according to the specific hazards involved in each entry. For example, WAC 296-307-594, Respirators, requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) for work areas considered to contain an IDLH atmosphere.

You must:

- (2) Provide employees, assigned to provide permit-required confined space rescue and emergency services, with:
 - Personal protective equipment (PPE) needed for safe entry.
 - Other equipment required to conduct rescues safely.
 - Training so they are:
 - Proficient in the use of the PPE and other equipment.
 - Proficient as an entrant of permit-required confined spaces.
 - Able to safely perform assigned rescue and emergency duties.
 - Knowledgeable in basic first aid and cardiopulmonary resuscitation (CPR).
 - Practice sessions for permit-required confined space rescues **at least** once every twelve months where dummies, manikins, or actual persons are removed from either:
 - The actual permit spaces; or
 - Representative permit spaces that simulate the opening size, configuration, and accessibility, of permit spaces where rescue will be performed.
- (3) Establish procedures for:
 - Contacting rescue and emergency services.
 - Rescuing entrants from permit-required confined spaces.
 - Providing necessary emergency services to rescued entrants.
 - Preventing unauthorized persons from attempting a rescue.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65014, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65016 Use nonentry rescue systems or methods whenever possible.

You must:

- Use nonentry retrieval systems or methods to rescue entrants in a permit-required confined space unless this:
 - Would increase the overall risk of injury to entrants; or
 - Would not contribute to the rescue of the entrant.
- Make sure each entrant uses a chest or full-body harness, with a retrieval line attached to the harness at one of the following locations:
 - At the center of the employee's back, near shoulder level.
 - Above the employee's head.
 - At another point which presents a profile small enough for the successful removal of the employee.

WAC 296-307-65016 (Cont.)

- Attach the retrieval line to a mechanical device or fixed point outside the space, so rescue can begin as soon as necessary.
- Make sure a mechanical device is available to retrieve entrants from vertical spaces more than five feet (1.52 m) deep.

Note: When you can demonstrate that the use of a chest or full-body harness is not feasible or creates a greater hazard, then you may use wristlets or another method shown to be the safest and most effective alternative.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65016, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65018 Make sure entry supervisors perform their responsibilities and duties.

You must:

- Make sure that an entry supervisor:
 - Authorizes the entry into a permit-required confined space by signing the entry permit.
 - Oversees entry operations.
 - Knows about the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.
 - Verifies and checks **all** of the following:
 - ♦ The appropriate entries have been made on the permit.
 - ♦ All tests specified by the permit have been conducted.
 - ♦ All procedures and equipment specified by the permit are in place before approving the permit and allowing entry to the space.
 - Terminates the entry and cancels the permit when:
 - ♦ The assigned task or job has been completed.
 - ♦ A condition in the space that is not covered by the entry permit is discovered.
 - Verifies that rescue services are available and that there is a way to contact them.
 - Removes unauthorized individuals who enter or attempt to enter the permit-required confined space during entry operations.
 - Determines that entry operations remain consistent with the terms of the entry permit and acceptable entry conditions are maintained:
 - ♦ Whenever responsibility for a permit-required space entry operation is transferred; and
 - ♦ At regular intervals dictated by the hazards and operations performed within the space.

Note:

- Make sure entry supervisors have the required knowledge and proficiency to perform the job duties and responsibilities required by this part.
- The entry supervisor may also perform other duties under this part, such as attendant or entrant, if they are trained and proficient in those duties.
- The responsibility of the entry supervisor may be passed from one supervisor to another during an entry operation.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65018, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65020 Provide an attendant outside the permit-required confined space.

Important:

- The number of attendants assigned should be tailored to the requirements of the space and the work performed.
- You need to assess if it is appropriate or possible to have multiple permit spaces monitored by a single attendant, or have an attendant stationed at a location outside each space. Video cameras and radios are examples of tools that may assist an attendant monitoring more than one space.
- Attendants may be stationed at any location outside the permit-required confined space if the duties described in this section can be effectively performed for each space that is monitored.

You must:

- Provide at least one attendant outside the permit-required confined space during entry operations.
- Make sure each permit-required confined space attendant:
 - Understands the hazards that may be faced during entry, including the mode, signs or symptoms, and results of exposure to the hazards.
 - Is aware of the behavioral effects of exposure to the hazard.
 - Continuously maintains an accurate count of entrants in the space.
 - Maintains an accurate record of who is in the permit-required confined space.
 - Communicates with entrants as necessary to monitor their status or alert them of the need to evacuate the space.
 - Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space.
 - Orders entrants to evacuate the space immediately if **any** of the following conditions occur:
 - ♦ A prohibited condition.
 - ♦ The behavioral effects of hazardous exposure on an entrant.
 - ♦ A situation outside the space that could endanger entrants.
 - ♦ The attendant cannot effectively and safely perform all the duties required in this part.
 - Takes the following actions when unauthorized persons approach or enter a space:
 - ♦ Warns unauthorized persons to stay away from the space.
 - ♦ Tells the unauthorized persons to exit immediately if they have entered the space.
 - ♦ Informs entrants and the entry supervisor if unauthorized persons have entered the space.
 - Performs nonentry rescues as specified by your rescue procedure.
 - Has the means to respond to an emergency affecting one or more of the permit spaces being monitored without preventing performance of the attendant's duties to the other spaces being monitored.
 - Carries out no duties that might interfere with their primary duty to monitor and protect the entrants.
 - Calls for rescue and other emergency services as soon as entrants may need assistance to escape from the space.
 - Monitors entry operations until relieved by another attendant or all entrants are out of the space.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65020, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65022 Make sure entrants know the hazardous conditions and their duties.**You must:**

- Make sure that all entrants:
 - Know the hazards they may face during entry, including the mode, signs or symptoms, and results of exposure to the hazards.
 - Use equipment properly.
 - Communicate with the attendant as necessary so the attendant can:
 - ♦ Monitor entrant status.
 - ♦ Alert entrants of the need to evacuate.
 - Alert the attendant whenever either of these situations exist:
 - ♦ A warning sign or symptom of exposure to a dangerous situation such as, behavioral changes, euphoria, giddiness potentially from lack of oxygen or exposure to solvents.
 - ♦ A prohibited condition.
 - Exit from the permit-required confined space as quickly as possible when one of the following occurs:
 - ♦ The attendant or entry supervisor gives an order to evacuate.
 - ♦ The entrant recognizes any warning sign or symptom of exposure to a dangerous situation.
 - ♦ The entrant detects a prohibited condition.
 - ♦ An evacuation alarm is activated.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65022, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65024 Implement procedures for ending entry.**You must:**

- Make sure you terminate the entry when entry operations are completed, including securing an entrance cover and canceling the permit.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65024, filed 12/21/04, effective 04/02/05.]

WAC 296-307-652 Alternate entry procedures.**Summary:****Your responsibility:**

To choose alternate entry procedures for spaces where the only hazard is a hazardous atmosphere.

Important:

- In addition to this section, you also need to meet the requirements in the following sections of this part:
 - WAC 296-307-644, Identifying and controlling permit-required confined spaces.
 - WAC 296-307-646, Permit-required confined space program.
 - WAC 296-307-648, Employee training.

WAC 296-307-652 (Cont.)

You must:

Make sure the following conditions are met if using alternate entry procedures.

WAC 296-307-65202

Follow these alternate entry procedures for permit-required confined spaces.

WAC 296-307-65204

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-652, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65202 Make sure the following conditions are met if using alternate entry procedures.

You must:

- Make sure, when using alternate entry procedures, instead of permit entry procedures, that you have monitoring and inspection data that supports the following:
 - That the only hazard of the permit-required confined space is an actual or potentially hazardous atmosphere.
 - That continuous forced air ventilation alone is all that is needed to maintain the permit-required confined space for safe entry.
- Make sure an entry to obtain monitoring and inspection data or to eliminate hazards is performed according to WAC 296-307-500, Permit entry procedures.
- Make sure all documentation produced is available to each affected employee and their authorized representative.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65202, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65204 Follow these alternate entry procedures for permit-required confined spaces.

You must:

- Use the following alternate entry procedures:
 - Eliminate any unsafe conditions before removing an entrance cover.
 - ◆ When entrance covers are removed, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space.
 - ◆ Certify that preentry measures have been taken (such as safe removal of the cover and having protection needed to gather preentry data), with the date, location of the space, and signature of the person certifying.
- Make the preentry certification available before entry to each entrant.
 - Before an employee enters the confined space, test the internal atmosphere with a calibrated, direct-reading instrument for all of the following, in this order:
 - ◆ Oxygen content.
 - ◆ Flammable gases and vapors.
 - ◆ Potential toxic air contaminants.
 - Provide entrants, or their authorized representatives, with an opportunity to observe the preentry and periodic testing.

WAC 296-307-65204 (Cont.)

- Make sure the atmosphere within the space is not hazardous when entrants are present.
- Use continuous forced air ventilation, as follows:
 - ◆ Wait until the forced air ventilation has removed any hazardous atmosphere before allowing entrants into the space.
 - ◆ Direct forced air ventilation toward the immediate areas where employees are, or will be, and continue ventilation until all employees have left the space.
- Provide the air supply from a clean source and make sure it does not increase hazards in the space.
 - Test the atmosphere within the space as needed to make sure hazards do not accumulate.
 - If a hazardous atmosphere is detected during entry, do all of the following:
 - ◆ Evacuate employees from the space immediately.
 - ◆ Evaluate the space to determine how the hazardous atmosphere developed.
 - ◆ Implement measures to protect employees from the hazardous atmosphere before continuing the entry operation.
 - ◆ Verify the space is safe for entry before continuing the entry operation.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65204, filed 12/21/04, effective 04/02/05.]

WAC 296-307-654 Nonpermit confined spaces requirements.

Summary:

Important:

A confined space may be classified as a nonpermit confined space for as long as the hazards remain eliminated. Once a hazard is present, you must follow all requirements of this part that apply.

Your responsibility:

To make sure any space you classify as nonpermit does not have the potential to contain serious health or safety hazards.

You must:

Follow these requirements when classifying a confined space as a nonpermit confined space.

WAC 296-307-65402

Reevaluate nonpermit confined spaces if hazards develop.

WAC 296-307-65404

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-654, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65402 Follow these requirements when classifying a confined space as a nonpermit confined space.

You must:

- Make sure the confined space meets these conditions to be classified as nonpermit confined spaces:
 - The confined space does not contain an actual or potential hazardous atmosphere.
 - The confined space does not contain hazards capable of causing death or serious physical harm. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.

WAC 296-307-65402 (Cont.)

- If you must enter to remove hazards, the space must be treated as a permit-required confined space until hazards have been eliminated.

Note:

- Controlling atmospheric hazards through forced air ventilation does not eliminate the hazards.
- You should evaluate the use of lockout-tagout, as covered in WAC 296-307-320, to determine if using it fully eliminates the hazard.
- You are allowed to use alternate entry procedures covered in WAC 296-307-652, if you can demonstrate that forced air ventilation alone will control all hazards in the space.

You must:

- Document how you determined the confined space contained no permit-required confined space hazards. Certify this documentation with the following:
 - Date.
 - Location of the space.
 - Signature of the person making the determination.
- Make the certification available to each entrant, or their authorized representative.

Note: This certification must be completed every time a permit-required confined space is reclassified as a nonpermit space.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65402, filed 12/21/04, effective 04/02/05.]

WAC 296-307-65404 Reevaluate nonpermit confined spaces if hazards develop.

You must:

- Reclassify a nonpermit confined space to a permit-required confined space, if necessary, when changes in the use or configuration of the space increase the hazards to entrants.
- Make sure all employees exit the space if hazards develop. You must then reevaluate the space and determine whether it must be reclassified as a permit-required confined space.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-65404, filed 12/21/04, effective 04/02/05.]

WAC 296-307-656 Definitions.

Acceptable entry conditions:

The conditions that must exist in a permit-required confined space to allow safe entry and work.

Attendant:

An individual stationed outside one or more permit-required confined spaces to monitor the entrants.

Blanking or blinding:

The absolute closure of a pipe, line, or duct by fastening a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore. It is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

WAC 296-307-656 (Cont.)

Confined space:

A space that is **all** of the following:

- Large enough and arranged so an employee could fully enter the space and work.
- Has limited or restricted entry or exit. Examples of spaces with limited or restricted entry are tanks, vessels, silos, storage bins, hoppers, vaults, excavations, and pits.
- Not primarily designed for human occupancy.

Double block and bleed:

The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency:

Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit-required confined space that could endanger authorized entrants.

Engulfment:

The surrounding capture of a person by a liquid or finely divided (flowable) solid substance that can be inhaled to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Enter (entry):

The action by which a person passes through an opening into a permit-required confined space and includes work activities in that space. Entry is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Note: If the opening is large enough for the worker to fully enter the space, a permit is required even for partial body entry. Permits are not required for partial body entry where the opening is not large enough for full entry, although other rules such as lockout-tagout, WAC 296-307-320 or respiratory hazards, WAC 296-307-624 may apply.

Entrant:

An employee who is authorized by the employer to enter a permit-required confined space.

Entry permit (permit):

The written or printed document that is provided by you to allow and control entry into a permit-required confined space and that contains the information required in WAC 296-307-650, Permit entry procedures.

Entry supervisor:

The person (such as the employer, crew leader, or crew chief) responsible for:

- Determining if acceptable entry conditions are present at a permit-required confined space where entry is planned;
- Authorizing entry and overseeing entry operations; and
- Terminating entry as required.

Hazardous atmosphere:

An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit-required confined space), injury, or acute illness caused by one or more of the following:

WAC 296-307-656 (Cont.)

- Flammable gas, vapor, or mist in excess of ten percent of its lower flammable limit (LFL).
- Airborne combustible dust at a concentration that meets or exceeds its LFL.

Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of five feet (1.52 m) or less.

- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- Atmospheric concentration of any substance which may exceed a permissible exposure limit. For additional information about atmospheric concentration, see chapter 296-62 WAC, Parts F, G, and I, General occupational health standards and WAC 296-307-624, Respiratory hazards.

Note: An airborne concentration of a substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.

- Any other atmospheric condition that is immediately dangerous to life or health.

Note: You can find guidance on establishing acceptable atmospheric conditions for air contaminants, which have no WISHA-determined doses or permissible exposure limits using other sources of information, such as:

- Material safety data sheets required by WAC 296-307-550, Employer chemical hazard communication.
- Published information.
- Internal documents.

Hot work permit:

A written authorization to perform operations, for example, riveting, welding, cutting, burning, and heating, that can provide a source of ignition.

Immediately dangerous to life or health (IDLH):

Any of the following conditions:

- An immediate or delayed threat to life.
- Anything that would cause irreversible adverse health effects.
- Anything that would interfere with an individual's ability to escape unaided from a permit-required confined space.

Note: Some materials - hydrogen fluoride gas and cadmium vapor, for example - may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse twelve to seventy-two hours after exposure. The victim "feels normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health (IDLH).

Inerting:

The displacement of the atmosphere in a permit-required confined space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Note: This procedure produces an IDLH oxygen-deficient atmosphere.

Isolation:

The process by which a permit-required confined space is removed from service and completely protected against the release of energy and material into the space by such means as: Blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

WAC 296-307-656 (Cont.)**Line breaking:**

The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Nonpermit confined space:

A confined space that does NOT contain actual hazards or potential hazards capable of causing death or serious physical harm.

Oxygen deficient atmosphere:

An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere:

An atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space or permit space:

A confined space that has one or more of the following characteristics capable of causing death or serious physical harm:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material with the potential for engulfing someone who enters.
- Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section.
- Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.
- Contains any other recognized serious safety or health hazard that could either:
 - Impair the ability to self-rescue; or
 - Result in a situation that presents an immediate danger to life or health.

Permit-required confined space program:

An overall program for:

- Controlling and appropriately protecting employees from permit-required confined space hazards;
AND
- Regulating employee entry into permit-required confined spaces.

Prohibited condition:

Any condition in a permit-required confined space that is not allowed by the permit during the authorized entry period.

Rescue service:

The personnel designated to rescue employees from permit-required confined spaces.

Retrieval system:

The equipment used for nonentry rescue of persons from permit-required confined spaces, such as a retrieval line, full-body harness or wristlets, and a lifting device or anchor.

Testing:

The process of identifying and evaluating the hazards that entrants may be exposed to in a permit-required confined space. Testing includes specifying the tests that are to be performed in the permit-required confined space.

Note: Testing allows employers to devise and implement adequate controls to protect entrants during entry, and to determine if acceptable entry conditions are present.

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 05-01-166 (Order 04-19), § 296-307-656, filed 12/21/04, effective 04/02/05.]

Resource Section Confined Spaces

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Atmospheric Testing of Permit-Required Confined Spaces

Use with Chapter 296-307 WAC, Part Y-8, Confined Spaces

Atmospheric testing of permit-required confined spaces is used so you can do both of the following:

1. Evaluate potential atmospheric hazards
2. Verify that acceptable atmospheric entry conditions exist

Evaluate Hazards

- Collect and analyze data on the atmosphere of your space using equipment that's sensitive enough and specific enough for any hazardous atmosphere that may arise. This will enable you to:
 - Develop appropriate entry procedures
 - and**
 - Maintain acceptable entry conditions.
- Have a technically-qualified individual perform, or at least review, the following:
 - Evaluate and interpret the data
 - Identify all serious hazards
 - Develop appropriate entry procedures

Note:

Examples of technically-qualified individuals include:

- WISHA industrial hygiene consultant
- Qualified industrial hygienist
- Qualified registered safety engineer
- Qualified safety professional
- Certified marine chemist

Verify that Acceptable Entry Conditions Exist

Verify that acceptable entry conditions exist by doing the following:

- If the space may contain a hazardous atmosphere, test for all potential contaminants.
 - Use the equipment specified on your permit, for the time specified by the manufacturer, to determine whether contaminants are within the range of acceptable entry conditions.
 - Measure for the time recommended by the manufacturer.
- Perform tests in this order:
 - First, perform a test for oxygen. Most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen-deficient atmosphere.
 - Next, test for combustible gases. They present an immediate threat to life, through inhalation, fire, or explosion.
 - Last, if necessary, test for toxic gases and vapors.
- Record test results, such as the actual concentration, in the appropriate space on the permit.
 - When monitoring atmospheres that may be stratified, also do the following:
 - Test the atmospheric envelope at a distance of approximately 4 feet (1.22 m) in the direction of travel, and to each side.
 - If using a sampling probe, adapt the entrant's rate of progress to the sampling speed and detector response.

NOTES

Evaluating Rescue Teams or Services

Use with Chapter 296-307 WAC, Part Y-8, Confined Spaces

This helpful tool will help you do the following for permit-required confined spaces in your workplace:

- Evaluate the type of rescue services you need
- and**
- Determine how well rescue services perform

Select and use either on-site rescue teams or off-site rescue services that will minimize the potential for harm to both entrants and rescuers.

For any rescue team or service, your evaluation should consist of the following two elements:

- An **initial evaluation** where you decide whether a rescue team or service is adequately trained and equipped to perform the kind of rescues needed at your workplace in a timely manner.
- A **performance evaluation** on the performance of the prospective or existing rescue team or service during an actual or practice rescue.

For example:

During your initial evaluation you determined that an on-site rescue team would be more expensive but not more effective than an off-site rescue service. As a result, you hire an off-site rescue service.

After observing the off-site rescue service perform a practice rescue, you decide their training or preparedness isn't adequate. You decide to select another rescue service or to form an on-site rescue team.

Initial Evaluation

The following information can help you determine the rescue service needs for your workplace.

For an off-site rescue service you need to, at a minimum, contact the service to plan and coordinate the evaluations required.

The following are examples that **do not** meet the requirements of WAC 296-307-65014, *Make sure you have adequate rescue and emergency services available*:

- Posting a rescue service's number without contacting them
- Planning to rely on 911 emergency services without checking to see if they are able to provide them.

Note:

Whether a rescue service meets your workplace needs depends on all of the following:

- The confined spaces from which a rescue may be necessary
- The hazards likely to be encountered in those spaces.
- The number of entrants needing rescue.

Table HT-1 can help you determine whether a rescue service meets your permit-required confined space rescue needs. Use the column labeled "Results" to answer the questions in the "Task" column.

Table HT-1
Initial Evaluation Worksheet
(If you answer no to any of these questions, you need to consider an alternative.)

| Task | Results |
|--|--|
| <p>1. Determine the rescue response time needs for your permit-required confined spaces.</p> <p>Examples:</p> <p>If entering an atmosphere that is potentially or immediately dangerous to life or health (IDLH), the rescue team or service needs to be standing by at the permit-required confined space, ready to enter.</p> <p>If the danger to entrants is restricted to mechanical hazards that can cause injuries such as broken bones or abrasions, a longer response time of 10 or 15 minutes might be acceptable.</p> | <p style="text-align: right;">_____minutes</p> |

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| Task | Results |
|--|---|
| b. Are key members of the rescue service available at these times? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c. If the rescue service becomes unavailable while an entry is underway, can they notify you so you can instruct the attendant to abort the entry immediately? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 4. Determine if the rescue service meets all of the requirements in the Performance Evaluation Worksheet found in Table HT- 2. | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If you answered “yes” above, how soon can the plan be implemented?</p> <hr/> <p>If you answered “no” and this can’t be resolved, then you need to consider an alternative.</p> |
| 5. Determine if a 911 service is willing to perform rescues at your workplace: | |
| a. If you call 911, is a responder available? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b. Will the 911 responder be willing to perform rescue? | <p>Rescue <input type="checkbox"/> First Aid Only <input type="checkbox"/></p> <p>If you answered “first aid only,” then an alternative is required.</p> |
| c. Have you made sure the 911 responders can perform rescues in your spaces? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 6. Determine if there is an adequate communication method between the attendant and the prospective rescuer: | |
| Can a request for rescue be transmitted without delay? | Yes <input type="checkbox"/> No <input type="checkbox"/> |

Performance Evaluation

WAC 296-307-65014, *Make sure you have adequate rescue and emergency services*, requires rescue practice at least once every 12 months if the team or service hasn't successfully performed a rescue within that time. This practice exercise provides you with an opportunity to evaluate the rescue service under conditions similar to your permit-required confined spaces.

First, as part of any practice session, the rescue service or another qualified party should perform a critique of the practice rescue, so that deficiencies can be corrected in:

- Procedures
- Equipment
- Training
- Number of people

Then, you should review the results of the critique and any corrections made for deficiencies identified by a "no" answer in Table HT-2. This will help you determine whether the service could be quickly upgraded to meet your needs.

Table HT-2 will help you determine:

- If the rescue service meets all of the performance requirements in WAC 296-307-65014, *Make sure you have adequate rescue and emergency services*
and
- What changes may be necessary.

Use the right column labeled "Results" to answer the questions in the "Task" column.

Table HT-2

Performance Evaluation Worksheet
(If you answer no to questions 1-12, you need to take corrective action)

| Task | Result |
|---|--|
| 1. Have all team members been trained as entrants, including the potential hazards of all permit-required confined spaces, or of representative spaces, from which rescue may be needed? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 2. Can team members recognize the signs, symptoms, and consequences of exposure to any hazardous atmospheres that may be present in those permit-required confined spaces? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 3. Is every team member: | |
| a. Provided with and properly trained in the use of any PPE that may be needed to perform rescues in the facility, such as air-line respirators or fall arrest equipment? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b. Properly trained to perform functions during rescues, and to use any rescue equipment, such as ropes and backboards, needed in a rescue attempt? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 4. Are team members trained in the first-aid and medical skills needed to treat victims injured or overcome by the types of hazards that may be encountered in the permit spaces at the facility? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 5. Do all team members perform their duties safely and efficiently? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 6. Do the team members focus on their own safety before considering the safety of the victim? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 7. If necessary, can the rescue service properly test the atmosphere to identify acceptable entry conditions? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 8. Can the rescue team members identify the information that applies to the rescue from: | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| a. Entry permits | |
| b. Hot work permits | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c. Material Safety Data Sheets (MSDSs)? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| 9. Has the rescue service been informed of any hazards that may arise from outside the permit-required confined space, such as those caused by future work near the space? | Yes <input type="checkbox"/> No <input type="checkbox"/> |

| Task | Result |
|--|--|
| <p>10. If necessary, can the rescue service properly rescue injured employees from a permit space that has any of the following:</p> <p>a. A limited size opening (less than 24 inches (60.9 cm) in diameter)?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>b. Limited internal space?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>c. Internal obstacles or hazards?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>11. If necessary, can the rescue service safely perform an elevated (high angle) rescue?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>12. Determine if the rescue service has a plan for each type of rescue operation at your workplace.</p> <p>a. Does the rescue service have a plan for each of the kinds of permit space rescue operations at your workplace?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>b. Is the plan adequate for all types of rescue operations that may be needed at your workplace?</p> | <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> |
| <p>13. Rescue practice may occur in representative confined spaces or in the most restrictive spaces. When planning a practice include any of the following features that exist in your permit-required confined spaces: <u>Space Access</u></p> <p>Horizontal -- The entrance is located on the side of the permit space. Use of retrieval lines could be difficult.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |
| <p>Vertical -- The entrance is located:</p> <ul style="list-style-type: none"> - On the top of the permit-required confined space so that rescuers must climb down <p>or</p> <ul style="list-style-type: none"> - The bottom of the permit space so that rescuers must climb up, to enter the space. <p>Rescuers may need special knowledge to safely retrieve an injured entrant.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |

| Task | Result |
|---|--|
| <p><u>Entrance Size</u></p> <p>Restricted – An entrance with a smallest dimension of 24 inches or less. Entrances of this size are too small for a rescuer to enter the space while using a self-contained breathing apparatus, or allow normal spinal immobilization of an injured employee.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |
| <p>Unrestricted – An entrance with a smallest dimension greater than 24 inches. These entrances allow relatively free movement into and out of the permit space.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |
| <p><u>Internal configuration</u></p> <p>Open -- No obstacles, barriers, or obstructions within the space. For example, a water tank.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |
| <p>Obstructed -- The space contains some type of obstacle, requiring a rescuer to maneuver around it. For example, a baffle or mixing blade. Large equipment such as a ladder or scaffold brought into a space for work purposes is considered an obstacle if the positioning or size makes rescue more difficult.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |
| <p>Elevated -- A space where the entrance is above grade by 4 feet or more. This type of space usually requires knowledge of high angle rescue procedures because it is difficult to package and transport an injured employee to the ground from the entrance.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |
| <p>Non-elevated -- A space with the entrance located less than 4 feet above grade. The rescue team can transport an injured employee normally.</p> | <p>Is this type of rescue a possible situation at your workplace?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><input type="checkbox"/> A description is attached.</p> |

NOTES

Example Confined Space Entry Programs

Use with Chapter 296-307 WAC, Part Y-8, Confined Spaces

This helpful tool gives you examples of confined space entry programs, including a fill-in-the-blank form, for different workplace situations. The examples are provided to help you determine what information to include in a program for your workplace. To develop an effective program for your facility or work environment, you will need to identify work conditions both typical to your industry and unique to your workplace.

The examples include:

- A fill-in-the-blank template
- 2 examples showing content information to consider for the following specific workplaces:
 - Meat and poultry rendering plants
 - Portable tank fabricating or servicing

You are responsible for implementing and maintaining your written program.

FILL-IN-THE-BLANK TEMPLATE

The following is a fill-in-the-blank template for a confined space entry program.

You are responsible for:

- Providing the actual content
and
- Implementing and maintaining your written program.

Complete this document by adding your specific information to meet the requirements of WAC 296-307-64602, *Develop a written permit-required confined space program*.

(Insert company name)

CONFINED SPACE ENTRY PROGRAM

OVERVIEW

This confined space entry program:

- Identifies all permit-required confined spaces in our workplace
and
- Describes our procedures for worker safety and health in permit-required confined spaces

Employees will participate in developing and implementing the program in the following ways:

(Insert how your employees will participate)

(Insert company name) will treat all confined spaces as permit-required spaces until they have been evaluated **and** are documented to be nonpermit.

ROLES & RESPONSIBILITIES

The following shows which employees are responsible for the tasks outlined:

For information only
Remove this box from your completed program

In addition to the roles below, you may want to designate:

- Someone with overall responsibilities for your program
or
- One person with all the responsibilities.

| Responsibility: | Person assigned this responsibility: |
|--|--------------------------------------|
| <p>Evaluate our work locations and determine: ✓ [Check appropriate box(es)]</p> <ul style="list-style-type: none"> • Confined space(s) exist at the worksite. • Permit-required confined space(s) exist at the worksite. | |
| <p>Evaluate the confined space(s) to determine whether hazards are present.</p> | |
| <p>Evaluate hazards and determine the appropriate entry procedure for the space.</p> <p>Note:</p> <ul style="list-style-type: none"> • Until evaluated and documented otherwise, all confined spaces will be considered permit-required spaces. • Alternate entry procedure may apply when the only hazard remaining in the space is a potential hazardous atmosphere controlled by the use of forced air ventilation. | |
| <p>Re-evaluate the space when the use, configuration, or hazards of a confined space change.</p> | |
| <p>Monitoring and testing as follows:</p> <ul style="list-style-type: none"> • Conduct initial monitoring to identify and evaluate any potentially hazardous atmospheres • Complete atmospheric testing in the following order: <ul style="list-style-type: none"> – Oxygen – Combustible gases – Toxic gases and vapors • Record the data (<u>specify location</u>) _____ • Keep these records on-site in (<u>Specify location</u>) _____ | |

| | |
|---|--|
| Inform exposed or potentially-exposed employees of the existence and hazards of confined spaces using the methods described below under "Control Confined Space Entry." | |
| <p>Provide employees entering confined spaces, or their designated representative, an opportunity to observe pre-entry testing and any subsequent testing.</p> <ul style="list-style-type: none"> - All test results will be provided to the entrants or their representatives upon request. - The space will be re-evaluated if entrants or their representatives believe that the permit space was inadequately tested. | |
| Make sure that all equipment needed for safe entry into any confined space is available and in proper working order. | |
| Conduct a review using the canceled entry permits to identify and correct any deficiencies in our program. | |

IDENTIFY CONFINED SPACES AND HAZARDS

For information only
Remove this box from your completed program.

If you have a list of confined spaces and their hazards, you can attach it instead of completing this table.

Confined Spaces and Hazards

| Confined Space (name or number) | Type of Space (tank, hopper, sump, pit etc.) | Location | Hazards |
|---|--|-----------------|----------------|
| <i>(Insert your confined space information)</i> | | | |
| | | | |
| | | | |
| | | | |

CONTROL OF CONFINED SPACE ENTRY

We use the following method(s) to inform employees about the existence and hazards of confined spaces, and prevent unauthorized entry:

- ☐ Posting danger signs at each permit space reading "Danger-Confined Space - Do Not Enter"

(Insert additional means you use to prevent entry)

For information only
Remove this box from your completed program

The methods used to prevent entry must be effective. The following are examples of effective methods:

- Using barriers
- Specialized tools under management's control to open the space
- Supplementing these measures with training and signs

PERMIT ENTRY PROCEDURES

Our entry procedures for permit spaces include the following:

For information only
Remove this box from your completed program

Examples of entry permits are included in the resource section.

You may have multiple entry procedures. Specific examples of some of the procedures you may use to enter and complete work include the following:

- Procedure 001 Lockout/Tagout (LOTO)
- Procedure 002 Atmospheric monitoring
- Procedure 003 Job Hazard Analysis

ALTERNATE ENTRY PROCEDURES

For information only
Remove this box from your completed program.

Complete this section **only** when using alternate entry.

Our permit spaces that have as their only hazard an actual or potential hazardous atmosphere may use alternate entry procedures. These alternate entry procedures don't require the use of an entry permit.

Alternate entry procedures can be used for the spaces listed in the following table:

| Confined Space Name or Number | Hazards | Method of Hazard Elimination | Potential Hazardous Atmosphere | Ventilation Equipment Required |
|---|---------|------------------------------|--------------------------------|--------------------------------|
| <i>(insert your specific information)</i> | | | | |
| | | | | |
| | | | | |
| | | | | |

We will do all of the following when using alternate entry procedures:

- Eliminate unsafe conditions before removing entrance covers.
 - After removing entrance covers, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space.
 - Certify that pre-entry measures have been taken (such as safe removal of the cover and having protection needed to gather pre-entry data), with the date, location of the space, and signature of the person certifying.
 - Make the pre-entry certification available to each entrant before entry.
- Before an employee enters the confined space, test the internal atmosphere with a calibrated, direct-reading instrument for all of the following, in this order:
 1. Oxygen content
 2. Flammable gases and vapors
 3. Potential toxic air contaminants.
- Provide entrants, or their authorized representatives, with an opportunity to observe the pre-entry and periodic testing.

- Make sure the atmosphere within the space isn't hazardous when entrants are present.
- Use continuous forced air ventilation, as follows:
 - Wait until the forced air ventilation has removed any hazardous atmosphere before allowing entrants into the space.
 - Direct forced air ventilation toward the immediate areas where employees are, or will be, and continue ventilation until all employees have left the space.
 - Provide the air supply from a clean source and make sure it doesn't increase hazards in the space.
- Test the atmosphere within the space as needed to make sure hazards don't accumulate.
- If a hazardous atmosphere is detected during entry, we will do all of the following:
 - Evacuate employees from the space immediately.
 - Evaluate the space to determine how the hazardous atmosphere developed.
 - Implement measures to protect employees from the hazardous atmosphere before continuing the entry operation.
 - Verify the space is safe for entry before continuing the entry operation.
- The written documentation is available to each employee entering the space or to that employee's representative at the confined space bulletin board.

CLASSIFY A CONFINED SPACE AS A NON-PERMIT SPACE

For information only

Remove this box from your completed program.

Complete this section **only** when you classify a space as non-permit.
See Non-permit Space Documentation Form in this section.

- A space will be classified nonpermit only for as long as all the hazards remain eliminated.
- If someone must enter the space to eliminate any of the hazards, we will follow all the requirements listed under the permit entry procedures.
- Documentation that no permit-required confined space hazards exist will include the following:
 - The date, location, and signature of the person making the determination.
 - How we determined that no permit-required confined space hazards exist.
 - Documentation will be available to entrants or their authorized representatives by posting at the entry to the space.

The following spaces can be classified as non-permit spaces by following the listed methods of hazard elimination:

| Date | Location of Confined Space | Hazards | Method of Hazard Elimination |
|--|----------------------------|---------|------------------------------|
| <i>(Input your specific information)</i> | | | |
| | | | |
| | | | |
| | | | |

NON-PERMIT SPACE DOCUMENTATION FORM

| | |
|---|--|
| Non-permit confined space name or number | <i>(Insert your specific information here)</i> |
| Location | |
| Documentation | |
| Date | |
| Signature | |

TRAINING

- We will provide permit space training to employees at the following times:
 - When hired, so new employees are aware of our confined spaces
 - Before they are assigned permit space entry duties
 - When their assigned duties change
 - and
 - When there is a change in a space that creates hazards for which they haven't been trained.

For information only

Remove this box from your completed program.

Following are 6 basic categories of training, based on duties and potential exposure:

1. Awareness training provided to all employees potentially exposed to permit spaces, covering the following:
 - a. The location and hazard of each space
 - b. The company program for confined spaces
 - c. Emphasis on **not** entering the space for any reason.
2. Entry and exit training for the following team members:
 - a. Entrants
 - b. Attendants
 - c. Supervisors
 - d. Rescue team members
3. Training on how to manage confined space entries for entry supervisors.
4. Rescue training for rescue team members.
5. Pre-entry procedure training for all:
 - a. Entrants
 - b. Supervisors
 - c. Attendants
 - d. Rescue team members
6. Training on evaluating and testing confined spaces for:
 - a. Entry supervisors
 - b. Staff assigned to test and evaluate the space
7. Retraining for employees when you have any reason to believe they aren't proficient at their confined space duties.

OUR RESPONSIBILITIES FOR CONTRACTORS

For information only
Remove this box from your completed program.

Complete this section **only** when you hire a contractor to work in your confined space(s).

A copy of this Confined Space Entry Program will be provided to each contractor involved in permit space entry work at our company. Each contractor will be briefed on the following:

- The location of the permit spaces at our facility.
- Entry into permit spaces is only allowed by following the written entry program.
- The reasons for listing the space as a permit space, including both of the following:
 - The identified hazards
 - Our experience with the particular space.
- Precautions we have implemented to protect employees working in or near the space.
- Who will debrief the contractor at the completion of entry operations, or during entry if needed, on whether any hazards were confronted or created during their work.

OUR RESPONSIBILITIES WITH HOST EMPLOYERS

For information only
Remove this box from your completed program.

Complete this section **only** when you are a contractor working in someone else's confined space.

Our entry supervisor will do the following to make sure entry operations are coordinated with host employers:

- Obtain any information on the hazards of the permit space and information from previous entry operations
- Determine if other workers will be working in or near the space.
- Coordinate entry operations with other workers
- Inform the host employer of the permit space program that we follow.
- Hold a debriefing conference at the completion of the entry operation, or during the entry operation if needed, to inform the host employer of any hazards confronted or created during work in the space.

RESCUE AND EMERGENCY SERVICES

We have developed the following rescue and emergency action plan:

For information only
Remove this box from your completed program.

1. Insert your specific company rescue and emergency plan here.
2. For more information about rescue from confined spaces, see the Helpful Tool *Evaluating Rescue Teams or Services*.
3. You need to use non-entry rescue procedures and equipment, unless this would increase the risk of injury to the entrant or would be ineffective.
4. For entry rescue, see Entry Rescue Plans in this section.
5. This section is **not** required for the following confined space entries:
 - Classified and documented non-permit spaces.
 - Proper use of alternate entry procedures.

ENTRY RESCUE PLANS

Following are 3 options for you to consider when developing rescue plans as outlined in the helpful tool, Evaluating Rescue Teams or Services, which is located in the Resources section of this part.

Option 1

The entry supervisor will contact (name of rescue service) at (phone number) to do both of the following:

- Coordinate entry
- Schedule an entry date and time.

Option 2

Complete the following information.

Train employees on the specific procedures for summoning the rescue and emergency services.

Name of rescue service: _____

Telephone number: _____

Location: _____

Approximate response time: _____

Name of emergency medical service: _____

Telephone number: _____

Location: _____

Approximate response time: _____

Option 3

The specific procedures for summoning rescue and emergency services for our workplace are:

Following are the permit spaces that require stand-by rescue services during entry. The rescue service will be available at the space during the entire entry procedure to ensure prompt entrant rescue.

| Permit Spaces Requiring Stand-by Rescue Services | |
|--|--|
| Permit space: | Stand-by rescue service name and telephone number: |
| | |
| | |
| | |

PERMIT-REQUIRED CONFINED SPACE PROGRAM REVIEW

**For information only
Remove this box from your completed program.**

This section is **not** required if you only enter non-permit spaces or use alternate entry procedures.

At least every 12 months we will conduct a review using canceled entry permits to identify any deficiencies in our program. We will conduct a review immediately if there is reason to believe that the program doesn't adequately protect our employees, such as the following situations:

- Unauthorized entry of a permit space
 - Discovery of a hazard not covered by the permit
 - Detection of a condition prohibited by the permit
 - An injury or near-miss during entry
 - Change in the use or configuration of the space
- or**
- Employee complaints of permit space program ineffectiveness.

Corrective measures will be documented by revising the program. Employees will participate in revising the program, and will be trained on any changes.

If no permit space entry operations are conducted during the year, no review is needed.

NOTES

Example Confined Space Entry Program for Meat and Poultry Rendering Plants

Cookers and dryers are horizontal, cylindrical vessels equipped with a center, rotating shaft and agitator paddles or discs. If the inner shell is jacketed, it is usually heated with steam at pressures up to 150 psig (1034.25 kPa). The rotating shaft assembly of the continuous cooker or dryer is also steam heated.

Cooker and dryer operations can be either batch or continuous. Multiple batch cookers are operated in parallel. When one unit of a multiple set is shut down for repairs, make means available to isolate that unit from the others which remain in operation.

POTENTIAL HAZARDS

Check the boxes after you have reviewed your workplace for these hazards.

The recognized hazards associated with cookers and dryers include the risk that employees could be:

- ☐ Struck or caught by rotating agitator.
- ☐ Engulfed in raw material or hot, recycled fat.
- ☐ Burned by steam from leaks into the cooker/dryer steam jacket or the condenser duct system if steam valves aren't properly closed and locked out.
- ☐ Burned by contact with hot metal surfaces, such as the agitator shaft assembly, or inner shell of the cooker/dryer.
- ☐ Subjected to heat stress caused by warm atmosphere inside cooker/dryer.
- ☐ Injured by slipping and falling on grease in the cooker/dryer.
- ☐ Electrically shocked by faulty equipment taken into the cooker/dryer.
- ☐ Burned or overcome by fire or products of combustion.
- ☐ Overcome by fumes generated by welding or cutting done on grease covered surfaces.

Permits

- The supervisor is always present at the cooker/dryer or other permit entry confined space when entry is made.
- The supervisor:
 - Follows the pre-entry isolation procedures described in the entry permit when preparing for entry, and
 - Makes sure the protective clothing, ventilating equipment, and any other equipment required by the permit are at the entry site.
- The permit specifies how isolation is accomplished and any other preparations needed before making entry. This is especially important in parallel arrangements of cooker/dryers so you don't have to shut down the entire operation to allow safe entry into one unit.

CONTROL OF HAZARDS

Check the boxes that apply after you have addressed the hazards below.

Mechanical

- ☐ Lock out main power switch to agitator motor at main power panel.
- ☐ Affix tag to the lock to inform others that a permit confined space entry is in progress.

Engulfment

- ☐ Close all valves in the raw material blow line.
- ☐ Secure each valve in its closed position using chain and lock.
- ☐ Attach a tag to the valve and chain warning that a permit confined space entry is in progress.
- ☐ The same procedure is used for securing the fat recycle valve.

Burns and heat stress

- ☐ Close steam supply valves to jacket and secure with chains and tags.
- ☐ Insert solid blank at flange in cooker vent line to condenser manifold duct system.
- ☐ Vent cooker/dryer by opening access door at discharge end and top center door to allow natural ventilation throughout the entry.
- ☐ If faster cooling is needed, use a portable ventilation fan to increase ventilation.
- ☐ Cooling water may be circulated through the jacket to faster reduce both outer and inner surface temperatures of cooker/dryers.
- ☐ Check air and inner surface temperatures in cooker/dryer to assure they are within acceptable limits before entering, or use proper protective clothing.

Fire and fume hazards

- ☐ Careful site preparation, such as cleaning the area within 4 inches (10.16 cm) of all welding or torch cutting operations, and proper ventilation are the preferred controls.
- ☐ All welding and cutting operations are required to be done based on chapter 296-307 WAC, Part V, Welding.
- ☐ Proper ventilation may be achieved by local exhaust ventilation, or the use of portable ventilation fans, or a combination of the two practices.

Electrical shock

- ☐ Electrical equipment used in cooker/dryers needs to be in serviceable condition.

Slips and falls

- ☐ Remove residual grease before entering cooker/dryer.

Attendant

- ☐ The supervisor is the attendant for employees entering cooker/dryers.

Rescue

- ☐ When necessary, the attendant calls the employer's trained rescue team or the local fire services as previously.

NOTES

Example Confined Space Entry Program for Workplaces where Portable Tanks are Fabricated or Serviced

During fabrication

These tanks and dry-bulk carriers are entered repeatedly throughout the fabrication process. These products aren't configured identically, but the manufacturing processes by which they are made are very similar.

Sources of hazards

In addition to the mechanical hazards arising from the risks that an entrant would be injured due to contact with components of the tank or the tools being used, there is also the risk that a worker could be injured by breathing fumes from welding materials or mists or vapors from materials used to coat the tank interior. In addition, many of these vapors and mists are flammable, so the failure to properly ventilate a tank could lead to a fire or explosion.

Control of hazards

- Welding
 - Use local exhaust ventilation to remove welding fumes once the tank or carrier is completed to the point that workers may enter and exit only through a manhole. (Follow the requirements of chapter 296-307 WAC, Part V, Welding).
 - Don't ever bring welding gas tanks into a tank or carrier that's a permit entry confined space.
- Application of interior coatings/linings
 - Control atmospheric hazards by forced air ventilation sufficient to keep the atmospheric concentration of flammable materials below 10% of the lower flammable limit (LFL) (or lower explosive limit (LEL), whichever term is used locally).
 - Provide the appropriate respirators and use them in addition to providing forced ventilation when the forced ventilation doesn't maintain acceptable respiratory conditions.

Permits

Because of the repetitive nature of the entries in these operations, an "area entry permit" will be issued to cover production areas where tanks are fabricated so that entry and exit are through manholes.

Authorization

Only the area supervisor may authorize an employee to enter a tank within the permit area. The area supervisor determines that conditions in the tank trailer, dry-bulk trailer, or truck, for example, meet permit requirements before authorizing entry.

Attendant

- The area supervisor designates an employee to maintain communication by employer specified means with employees working in tanks to make sure they're safe.
- The attendant may not enter any permit confined space to rescue an entrant or for any other reason, unless authorized by the rescue procedure and, and even then, only after calling the rescue team and being relieved by an attendant by another worker.

Communications and observation

- Communications between the attendant and entrants has to be maintained throughout entry.
- Methods of communication that may be specified by the permit include voice, voice-powered radio, tapping or rapping codes on tank walls, and signaling tugs on a rope.
- The attendant's need to observe the work activities such as chipping, grinding, welding, spraying, for example, that require deliberate operator control to make sure they continue normally.
- These activities often generate so much noise that the necessary hearing protection makes communication by voice difficult.

Rescue Procedures

Acceptable rescue procedures include entry by a team of employee-rescuers, use of public emergency services, and procedures for breaching the tank.

The area permit specifies which procedures are available, but the area supervisor makes the final decision based on circumstances.

Note:

Certain injuries may make it necessary to breach the tank to remove a person rather than risk additional injury by removal through an existing manhole.

The supervisor makes sure that no breaching procedure used for rescue would violate terms of the entry permit.

For example, if the tank has to be breached by cutting with a torch, the tank surfaces to be cut need to:

- Be free of volatile or combustible coatings within four inches (10.16 cm) of the cutting line
and
- The atmosphere within the tank has to be below the LFL.

Retrieval line and harnesses

- The retrieval lines and harnesses generally required under this rule are usually impractical for use in tanks. The internal configuration of the tanks and their interior baffles and other structures would prevent rescuers from hauling out injured entrants.
- However, unless the rescue procedure calls for breaching the tank for rescue, the rescue team needs to be trained in the use of retrieval lines and harnesses for removing injured employees through manholes.

REPAIR OR SERVICE OF “USED” TANKS AND BULK TRAILERS

Sources of hazards

In addition to facing the potential hazards encountered in fabrication or manufacturing, tanks or trailers which have been in service may contain residues of dangerous materials, whether left over from the transportation of hazardous cargoes or generated by chemical or bacterial action on residues of non-hazardous cargoes.

Control of atmospheric hazards

A “used” tank needs to be brought into areas where tank entry is authorized only after the tank has been emptied, cleansed of any residues without employee entry, and purged of any potential atmospheric hazards.

Welding

- In addition to tank cleaning for control of atmospheric hazards, coating and surface materials need to be:
 - Removed four inches (10.16 cm) or more from any surface area where welding or other torch work will be done
 - and
 - Make sure the atmosphere within the tank remains well below the LFL.
- Follow the requirements of chapter 296-307 WAC, Part V, Welding, at all times.

Permits

- An entry permit needs to be issued prior to authorization of entry into used tank trailers, dry-bulk trailers, or trucks.
- In addition to the pre-entry cleaning requirement, this permit needs to require the employee safeguards specified for new tank fabrication or construction permit areas.

Authorization

- Only the area supervisor may authorize an employee to enter a tank trailer, dry-bulk trailer, or truck within the permit area.
- The area supervisor determines that the entry permit requirements have been met before authorizing entry.

NOTES

Sample Confined Space Entry Permits

Use with Chapter 296-307 WAC, Part Y-8, Confined Spaces

The following 3 fill-in-the-blank confined space entry permits can be modified to fit your particular entry or used as they are if they can fit your entry needs.

You can also design your own entry permit. You're not required to use the fill-in-the-blank entry permits provided here.

Sample 1

| | | |
|--|----------|---------------------------------------|
| Date: | | |
| Site location or description: | | |
| Purpose of entry: _____ _____ _____ _____ | | |
| Supervisor(s) in charge of crews: | Phone #: | Type of crew (welding, plumbing, etc) |
| | | |
| | | |
| Permit duration: | | |
| Communication procedures (including equipment): _____ _____ _____ _____ | | |
| Rescue procedures (also see emergency contact phone numbers at end of form): _____ _____ | | |

| REQUIREMENTS COMPLETED (Put N/A if item doesn't apply) | DATE | TIME | REQUIREMENTS COMPLETED (Put N/A if item doesn't apply) | DATE | TIME |
|--|------|------|---|------|------|
| Lockout/De-energize/Try-out | | | Supplied Air Respirator (N/A if alternate entry) | | |
| Line(s) Broken-Capped-Blank | | | Respirator(s) (Air Purifying) | | |
| Purge-Flush and Vent | | | Protective Clothing | | |
| Ventilation | | | Full Body Harness w/ "D" ring | | |
| Secure Area (Post and Flag) | | | Emergency Escape Retrieval Equipment | | |
| Lighting (Explosive Proof) | | | Lifelines | | |
| Hotwork Permit | | | Standby safety personnel (N/A if alternate entry) | | |
| Fire Extinguishers | | | Resuscitator—Inhalator (N/A if alternate entry) | | |
| Add other specific information, if needed, or attach additional instructions or requirements. See the following examples in bold print. | | | | | |
| Line(s) to be bled/blanked: | | | | | |
| Ventilation equipment: | | | | | |
| PPE clothing: | | | | | |
| Respirator(s): | | | | | |
| Fire extinguisher(s): | | | | | |
| Emergency retrieval equipment: | | | | | |

Sample 1 (continued)

| AIR MONITORING | | | | | | | | | |
|--|------------|---|----------------------------------|---------------------------|------------------------|------------|------------------------|--|--|
| Substance Monitored | | Permissible Levels | | Monitoring Results | | | | | |
| Time monitored (put time) | | Record the time | | | | | | | |
| Percent Oxygen | | 19.5% to 23.5% | | | | | | | |
| LEL/LFL | | Under 10% | | | | | | | |
| Toxic 1: | | _____ PEL | _____ STEL | | | | | | |
| Toxic 2: | | _____ PEL | _____ STEL | | | | | | |
| Toxic 3: | | _____ PEL | _____ STEL | | | | | | |
| Toxic 4: | | _____ PEL | _____ STEL | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| REMARKS: | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Air Tester Name | ID# | Instrument(s) Used (For example: oxygen meter, combustible gas indicator, etc.) | | | Model # or Type | | Serial# or Unit | | |
| | | | | | | | | | |
| | | | | | | | | | |
| ATTENDANTS AND ENTRANTS | | | | | | | | | |
| Attendant(s) (Required for all confined space work except alternate entry) | | ID# | Confined Space Entrant(s) | | | ID# | | | |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS:

SUPERVISOR AUTHORIZATION - ALL CONDITIONS SATISFIED

Department or phone number: _____

EMERGENCY CONTACT PHONE NUMBERS:

AMBULANCE: FIRE: SAFETY: RESCUE TEAM: OTHER:

CONFINED SPACE ENTRY PERMIT

Sample 2

| | |
|--|------------------------|
| Date and time issued: | Date and time expires: |
| Job site/space I.D.: | Job supervisor: |
| Equipment to be worked on: | Work to be performed: |
| Standby personnel: | |
| | |
| 1. Atmospheric Checks: Time: _____ Oxygen _____ % Explosives _____ %L.F.M. Toxic _____ PPM | |
| | |
| 2. Tester's signature: _____ | |
| | |
| 3. Source isolation (No Entry): N/A Yes No Pumps or lines blinded, disconnected, or blocked: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| | |
| 4. Ventilation modification: N/A Yes No Mechanical: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Natural Ventilation only: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| | |
| 5. Atmospheric check after isolation and ventilation: Oxygen: _____ % >19.5% Explosive: _____ % L.F.M. <10% Toxic: _____ PPM <10PPM H₂S Time: _____ Tester's signature: _____ | |
| | |
| 6. Communication procedures: | |
| | |
| | |
| | |

Sample 2 (continued)

| | | | |
|--|---------------------------------|--------------------------------|--------------------------|
| 7. Rescue procedures: | | | |
| | | | |
| | | | |
| 8. Entry standby and backup persons successfully completed required training? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | |
| Is it current? | <input type="checkbox"/> | <input type="checkbox"/> | |
| | | | |
| 9. Equipment: | N/A | Yes | No |
| Direct reading gas monitor-tested: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Safety harnesses and lifelines for entry and standby persons: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hoisting equipment: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Powered communications: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| SCBA's for entry and standby persons: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Protective clothing: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| All electric equipment listed: Class I, Division I, Group D and non-sparking tools | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | |
| 10. Periodic atmospheric tests: | | | |
| Oxygen _____% Time _____ | Oxygen _____% Time _____ | | |
| Oxygen _____% Time _____ | Oxygen _____% Time _____ | | |
| Explosive _____% Time _____ | Explosive _____% Time _____ | | |
| Explosive _____% Time _____ | Explosive _____% Time _____ | | |
| Toxic _____% Time _____ | Toxic _____% Time _____ | | |
| Toxic _____% Time _____ | Toxic _____% Time _____ | | |

We have reviewed the work authorized by this permit and the information contained here. Written instruction and safety procedures have been received and are understood. Entry cannot be approved if any squares are marked in the "No" column. This permit not valid unless all appropriate items are completed.

Permit prepared by: _____

Entry Supervisor

Approved by: _____

Unit Supervisor

Reviewed by: _____

Operations Manager

This permit is to be kept at the job site. Return this job site copy to the unit supervisor following job completion.

| Entrants Name | Sign in | Sign out | Sign in | Sign out |
|---------------|---------|----------|---------|----------|
| | | | | |
| | | | | |
| | | | | |

Sample 3

PERMIT VALID FOR 8 HOURS ONLY. ALL PERMIT COPIES MUST REMAIN AT THE SITE UNTIL JOB IS COMPLETED.

Date: _____ Site location /description: _____

Purpose of entry: _____

| | | |
|-----------------------------------|--------------|-------------|
| Supervisor (s) in charge of crews | Type of Crew | Telephone # |
|-----------------------------------|--------------|-------------|

Communication procedures:

Rescue procedures (telephone number at bottom):

BOLD INDICATES MINIMUM REQUIREMENTS TO COMPLETE AND REVIEW PRIOR TO ENTRY

Note: For Items that do not apply, enter N/A in the blank.

| REQUIREMENTS COMPLETED | DATE | TIME | REQUIREMENTS COMPLETED | DATE | TIME |
|-----------------------------|------|------|--------------------------------------|------|------|
| Lockout/De-energize/Tagout | | | Full Body Harness w/"D" Ring | | |
| Line(s) Broken-Capped-Blank | | | Emergency Escape Retrieval Equipment | | |
| Purge-Flush and Vent | | | Lifelines | | |
| Ventilation | | | Fire Extinguishers | | |

| | | | | | |
|--|--|--|--------------------------------|--|--|
| Secure Area (Post and Flag) | | | Lighting (Explosive proof) | | |
| Breathing Apparatus | | | Protective Clothing | | |
| Resuscitator - Inhalator | | | Respirator(s) (Air Purifying) | | |
| Standby Safety Personnel | | | Burning and Welding Permit | | |
| Continuous Monitoring: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| Periodic Monitoring Frequency: _____ | | | | | |
| Test(s) | | | Permissible entry level | | |
| Percent of oxygen | | | 19.5% TO 23.5% | | |
| Lower flammable limit | | | Under 10% | | |
| Carbon monoxide | | | +35 PPM | | |
| Aromatic Hydrocarbon | | | +1 PPM *5 PPM | | |
| Hydrogen Cyanide | | | (Skin) *4 PPM | | |
| Hydrogen Sulfide | | | +10 PPM *15 PPM | | |
| Sulfur Dioxide | | | +2 PPM *5 PPM | | |
| Ammonia | | | * 35 PPM | | |
| <p>* Short-term exposure limit: Employees can work in the area up to 15 minutes.</p> <p>+ 8 hour Time Weighted Average: Employees can work in the area 8 hours (longer with appropriate respiratory protection).</p> <p>REMARKS: _____</p> <p>_____</p> | | | | | |

CONFINED SPACE ENTRY PERMIT
Sample 3 (continued)

| | |
|---|----------------|
| GAS TESTER NAME & CHECK #: | |
| | |
| INSTRUCTIONS USED: | |
| | |
| MODEL &/OR TYPE: | |
| | |
| SERIAL &/OR UNIT #: | |
| | |
| | |
| SAFETY STANDBY IS REQUIRED FOR ALL CONFINED SPACE WORK | |
| SAFETY STANDBY PERSON(S) | CHECK# |
| | |
| | |
| | |
| | |
| CONFINED SPACE ENTRANT(S) | CHECK # |
| | |
| | |
| | |
| | |
| SUPERVISOR AUTHORIZATION - ALL CONDITIONS SATISFIED: | |
| Department or phone number: _____ | |
| <u>EMERGENCY CONTACT PHONE NUMBERS:</u> | |
| Ambulance: _____ | |
| Fire: _____ | |
| Safety: _____ | |
| Gas coordinator: _____ | |